



## International standardization compliance in aviation



Tyler B. Spence<sup>a,\*</sup>, Richard O. Fanjoy<sup>a</sup>, Chien-tsung Lu<sup>a</sup>, Stewart W. Schreckengast<sup>b</sup>

<sup>a</sup> Purdue University, 1401 Aviation Dr., West Lafayette, IN 47907, USA

<sup>b</sup> University of South Australia, 101 Currie St., Adelaide, SA 5001, Australia

### ARTICLE INFO

#### Article history:

Received 7 January 2015  
Received in revised form  
15 June 2015  
Accepted 24 June 2015  
Available online 7 July 2015

#### Keywords:

ICAO  
International aviation standards  
Aviation fatalities  
Aviation safety  
Aviation policy

### ABSTRACT

The commercial aviation industry is global in the sense that passengers travel around the world from destination to destination. It is also global in that the states of the world (countries) regulate the industry domestically and internationally. There is a unique stage where the world comes together to promote aviation, discuss ideas and establish international standards. This stage is the International Civil Aviation Organization (ICAO). The 191 current member states signed treaties acknowledging their commitment to abiding by the standards and practices established by ICAO. No state is 100 percent compliant with international standards, however, and the purpose of this paper was to explore the relationship between the fulfillment of compliance by individual member states and the safety of the commercial aviation industry in terms of fatality rates. Using a Negative Binomial regression, the results suggested that there was a relationship between compliance with international safety standards and fatalities, as well as associations between fatality rates and member states levels of GDP and population. Implications of this research apply to all ICAO member states as the concerns grow over growing air travel and airspace congestion over the next several decades.

© 2015 Elsevier Ltd. All rights reserved.

### 1. Introduction

International organizations (IOs), more specifically International Governmental Organizations (IGOs) and Non-Governmental Organizations (NGOs), are prominent frameworks for negotiations and diplomacy between the states of the world. There are approximately 238 international organizations that are focused on an array of issues from humanitarian policies to environmental concerns. Some of the more prominent IOs include the United Nations (UN), World Health Organization (WHO) and North Atlantic Treaty Organization (NATO) (Barnett and Finnemore, 2004). Barnett and Finnemore (2004) write, “States create IOs to solve problems of incomplete information, transactions costs, and other barriers to welfare improvements for their members” (p. 2). As the world has become more globalized, international organizations have been created to help make industries compete equitably and fairly. In the aviation industry, the International Civil Aviation Organization (ICAO) was chartered to help enable a strong and safe global aviation industry as commercial flights became a relevant means for travel. The purpose of this study was to explore the link between

participation in international organizations such as ICAO and a safe aviation history. Analysis of this link could provide insight into the impact of state compliance with ICAO standards. This study focused on compliance with international regulatory organizations and the extent to which such compliance makes a difference in the aviation industry. In order to address the issue of ICAO standardization among nations, the research question explored was: “Is there a relationship between compliance with global aviation standards and a safe commercial aviation industry?” Flights from airlines around the world carry passengers and cargo on a daily basis implying aviation is a global industry.

ICAO is the international organization that oversees standards and practices for participating nations in an attempt to make the safest and most efficient industry possible. There are currently 191 participating members in ICAO that agree to strive for the same goals. When an airline has an accident anywhere in the world it affects the entire industry negatively, especially when fatalities are involved. Through continuous compromise and negotiation, the participating member states in ICAO have created a collection of practices that intend to create a safer aviation industry. Intentions, however, do not ensure that every state participating in ICAO implements all or even a majority of the policies recommended by ICAO. Even with the best of intentions, fatalities still occur attributable to both unpreventable and preventable circumstances. The

\* Corresponding author.

E-mail address: [spence5@purdue.edu](mailto:spence5@purdue.edu) (T.B. Spence).

fact that preventable accidents still occur indicates that there is room for improvement.

## 2. Literature review

International organizations (IOs) are formed through cooperation from nations based on a central global idea. The effect of globalization is that, as of 2004, there are more than 238 international organizations playing a role in world affairs (Barnett and Finnemore, 2004). International organizations such as the United Nations, the World Health Organization, and the World Trade Organization have been established to provide forums for states to negotiate simultaneously and solve global problems.

Globalization is extremely important to aviation. People are able to travel around the world in a matter of hours and, in the hopes of creating an even more seamless world, states have developed international organizations to specifically facilitate standards and practices for the aviation community. The ultimate goal of these organizations, and the industry as a whole, is to provide the most efficient yet safest travel possible.

The international relations theory of liberal institutionalism, or institutionalism, can be applied to aviation in order to help understand why states make decisions regarding standardization and compliance with international practices. Institutionalism is a theory of social science that seeks to discover why states behave the way they do. Keohane and Martin (1995) state:

When state elites do not foresee self-interested benefits from cooperation, we do not expect cooperation to occur, nor the institutions that facilitate cooperation to develop. When states can jointly benefit from cooperation, on the other hand, we expect governments to attempt to construct such institutions. (pp. 42–43)

This theory can help explain why international organizations such as ICAO are formed and used as an arena for multi-lateral cooperation. Compromise among states is not uncommon as states may even forego an immediate short-term benefit to compromise for a long-term benefit. This systematic evaluation to determine compromise makes the institutions effective and unique in international politics.

The current research must be framed with respect to the ultimate beliefs and goals that the international community agrees upon because negotiations and multilateral discussions are paramount to a successful organization. The two most important international organizations impacting standardization and practices in aviation are the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA). With the primary goals of efficient and safe travel in aviation and the belief that cooperation is crucial on an international level, government involvement is imperative. Aviation incidents and accidents in aviation may reflect poorly on the state from which an aircraft operated, the state in which an incident occurs, and the airline itself, not to mention the loss of human life. Achieving the safest aviation system possible is a shared goal across the industry.

### 2.1. International Civil Aviation Organization

ICAO was chartered on December 7, 1944 and was officially ratified by a majority of the original 52 signatories on April 5, 1947, becoming an official agency of the United Nations (ICAO, n.d.a). The first meeting that established ICAO was negotiated in Chicago during, what was appropriately called, the Chicago Convention (Talmon, 2009). Today there are 191 participating member states representing nearly every nation in the international aviation

community as well as the world. Nayar (1995) describes the events of the convention as successful despite natural conflicts that arose through diplomatic discourse.

The participating member states were able to agree on several key issues regarding “freedoms of the air.” However, these states also stipulated that sovereignty of individual states is essential (FAA, 1994). This means that even though all of the participating member states agree to adhere to the policies as set forth by ICAO, they do so at will and without commitment or infringement on their authority. There is no higher authority than the state regarding regulation and enforcement. This poses problems for all international organizations, not just ICAO, because it means that the organization does not have any “hard power” to exert its will on member states. Should a member state not choose to abide by a certain policy then the most stringent action that can be taken is a vote to ban the member from the organization. Ultimately, the expectation is that all of the member states willingly accept the policies and procedures of the organization because each state has agreed to adhere to them. For ICAO, rules and policies are developed to increase the safety and efficiency of the aviation industry.

The United States supports ICAO and was one of the original charter members. The Federal Aviation Administration (FAA) (1994) through advisory circular 91-70 states:

As a charter member of ICAO, the United States has fully supported the organization's goal from its inception, being especially concerned with technical matters. Through ICAO, the United States works to achieve the highest practical uniform air regulations, standards and procedures for aircraft, personnel, airways, and aviation services throughout the world. At the same time the United States depends upon ICAO to ensure that navigation facilities, airports, weather, and radio services provided by other nations meet international standards (FAA, 1994, p. 5).

Currently, as the sole remaining superpower in the world after the fall of the Soviet Union, the United States has a presence in most of the world. Because it has such a high profile, the United States is a key player in world politics and this includes participating in and adopting the policies of world organizations. In the United States, the FAA uses standards and procedures from ICAO to frame its own practices and maintain a safe aviation industry.

A member state that agrees to follow the principles of ICAO is making a statement to the other member states on how it believes the aviation industry should operate. The initial “five freedoms of the air” are one of the many outcomes of the Chicago Convention in 1944. These principles set the framework for how member states set their own national policies with regards to international aviation. According to Milde (2008), freedoms, “in order to stress their exceptional nature,” can be described as privileges that represent “the basic and elementary proviso for the ‘right to fly’ internationally” (p. 104).

These five freedoms are derived from the International Air Services Transit Agreement and the International Air Transport Agreement (Milde, 2008). The first two freedoms granted by the Air Services Transit Agreement are the right to fly over a state without landing and the right to stop in a state for non-traffic reasons such as refueling or emergencies. These are important for international travel because aircraft from any member state are able to fly over borders without regional limitations.

Three additional freedoms added by the Air Transport Agreement are: the right to allow passengers to disembark the aircraft in another state as long as they boarded in the state in which the aircraft is operated, the right to allow passengers to board in a foreign state if the aircraft is returning to the state from which it is

Download English Version:

<https://daneshyari.com/en/article/1030716>

Download Persian Version:

<https://daneshyari.com/article/1030716>

[Daneshyari.com](https://daneshyari.com)